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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/116,589 07/16/98 NISHIKAWA S Q51098

MM91/0317
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WASHINGTON DC 20037-3202

EXAMINER

CHANG, A

ART UNIT

PAPER NUMBER

2872

DATE MAILED:

03/17/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/116,589

Applicant
Nishikawa

Examiner
Audrey Chang

Group Art Unit
2872



☒ Responsive to communication(s) filed on Jan 27, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-62 is/are pending in the application.

Of the above, claim(s) 1-27 and 31-61 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 28-30 and 62 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Remark

1. This Office Action is in response to applicant's amendment filed on January 27, 2000 which has been entered as paper number 10.
2. By this amendment, claims 28-30 have been amended and claim 62 has been newly added by the applicant. Claims 28-30 and 62 remain pending in this application. Claims 1-27 and 31-61 have been withdrawn from further consideration as being drawn to non-elected invention groups.
3. The amendment to the specification of page 34 has not been entered due to the error in the amendment.
4. The rejection to claims 28-30 under 35 USC 112, second paragraph, set forth in the previous Office Action dated October 25, 1999 is withdrawn in response to applicant's amendment.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 28 and newly added claim 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Kawazoe et al (PN. 5,781,317) in view of the patent issued to Hopwood (PN. 4,915,464).

The reasons for rejection based on the teachings of Kawazoe et al are set forth in the previous Office Action dated October 25, 1999. Claim 28 has been amended to include additional feature concerning filtering unwanted order of diffracted light from reflecting back to the recording photosensitive material. It is rather

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well known in the art to use filtering means to absorb or filter unwanted orders of diffracted light to eliminate unwanted interference fringes being recorded in the hologram recording process for the purpose to eliminate noise as demonstrated by the teachings of Kawazoe et al to use a black paint (2263) to absorb unwanted orders of light to prevent it reflects back to the photosensitive recording medium, (please see Figure 39) and Hopwood teaches to use a dichroic filter interposed between the hologram and the photosensitive holographic material to eliminate unwanted orders of diffraction light, (please see column 14, lines 18-21). It would therefore have been obvious to one skilled in the art to apply the cited teachings to use the appropriate filtering means to prevent the unwanted orders of diffracted light to enter the photosensitive holographic material for the benefit of eliminating the unwanted noise holograms being recorded.

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Molteni et al (PN. 5,473,447).

The reasons for rejection are set forth in the previous Office Action dated October 25, 1999.

Claim 29 has been amended to add the additional feature of having a first transmission hologram having first pattern to be recorded and then replacing such with a second transmission hologram having a second pattern to be recorded in the photosensitive material. Molteni et al teaches that the master transmission hologram (H_1) comprises a plurality of holograms having different fringes patterns that correspond to a plurality of two dimensional images being viewed through a plurality of slits, (please see Figure 9). The plurality of holograms represents the two dimensional images are reconstructed simultaneously when the hologram (H_1) is illuminated by the reconstruction beam (36) to record the plurality of image on the holographic plate (H_2), (please see Figure ⁶7). Although this reference does not teach explicitly to make the plurality of fringes patterns or the holograms contained in hologram (H_1) into separate holograms and record it one by one to the

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holographic plate (H_2), however to record them simultaneously with all of the hologram fringes being placed on one single hologram or to record them one by one are obvious variations to one skilled in the art since they involve merely routine skill in the art.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Brumm (PN. 3,758,186).

Brumm teaches a method of copying holograms wherein a holographic recording medium (H_6) having recording surface (R_6) is stacked on a transmission type of hologram (H_5) and a reconstruction light (I) is illuminated on the transmission hologram from a side that is not opposite to the recording surface of the recording medium wherein the transmitted zero order light (I_0) acts as the reference beam and the first order diffraction beam (I_1) acts as the object beam for producing interference fringes in the recording medium (H_6). Brumm further teaches that a mirror is provided at the other side of the recording medium to also record a back beam hologram, (please see Figure 3, columns 4 and 5). This reference has met all the limitations of the claims with the exception that it does not teach explicitly that the recording medium is a photosensitive material however photosensitivity is a necessary condition for recording medium to record a hologram using optical interference method such feature is therefore either inherently met or an obvious modification to one skilled in the art. This reference also does not teach explicitly that the hologram is a volume hologram however both volume hologram and thin hologram are well known types of holograms in the art with only difference in the ratio between fringes size and the thickness of the medium, such modification would therefore have been an obvious variation to one skilled in the art. This reference also does not teach about having a plurality of such volume holograms in a plurality of pixels however it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the

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claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ2d 1647 (1987).

Response to Arguments

9. Applicant's arguments with respect to the amended claims 28-30 have been considered but are moot in view of the new ground(s) of rejection. The newly added features have been fully considered and they are rejected for the reasons stated above. The newly added claim 62 has been fully considered and it is rejected for the reasons stated above.

Applicant's arguments are drawn to newly added features to the claims and they have been responded and addressed in the paragraphs above.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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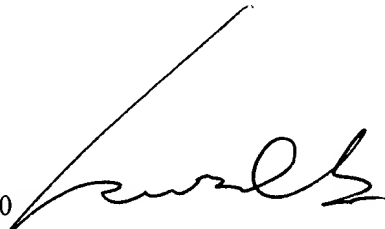
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chang whose telephone number is (703) 305-6208.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Papers related to this application may be submitted to Group 2800 through facsimile transmission. Papers should be faxed to Group 2800 via PTO Fax Center (fax number 703-308-7722) located in Crystal Plaza 4.

A. Chang

March 15, 2000



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